

can be found in the present specification, for example, at page 4, first full paragraph.

Accordingly, new matter has not been added.

II. Information Disclosure Statements

Applicants submit herewith an Information Disclosure Statement (IDS) containing information uncovered or made of record in assignee's, Mannington Mills of Delaware, Inc. ("Mannington"), on-going litigations. The Examiner is invited to contact the undersigned if he would like to discuss these documents in a personal or telephonic interview.

III. Redaction of Remarks

In response to the Office Action of October 10, 2001, Applicants submitted remarks over the art cited therein, particularly U.S. Patent No. 4,214,028 to Shortway et al. ("Shortway"). In those remarks, Applicants distinguished the claimed invention over Shortway by distinguishing, inter alia, the method of mechanical embossing disclosed in Shortway. Upon further consideration, Applicants believe that those remarks do not accurately and completely describe Applicants' invention. For example, in the remarks filed April 10, 2002, Applicants asserted that Shortway describes mechanically embossing the entire surface of the wear layer to give it temporarily a desired flat, dead or dull mat finish or texture over the entire surface. While Shortway does teach as

much, Applicants initial description of the claimed invention was not described as accurately as it could have been. Applicants previously asserted that the claimed invention is directed to a method that does not involve mechanically embossing the whole wear layer, but to a portion of the wear layer. To be more accurate, Applicants should have stated that while Shortway requires mechanically embossing the entire wear layer prior to chemical embossing, the claimed invention neither requires nor excludes mechanically embossing the entire wear layer. Rather, a person of ordinary skill in the art would understand that "mechanically embossed portion," as recited in the claimed invention, refers to every part of the wear layer that has been mechanically embossed.

Because Shortway is directed to a fundamentally different method of making decorative surface coverings, the remarks concerning the mechanical embossing procedure described as "chemically assisted mechanical texturing," are also redacted in favor of the differences described in more detail below. Applicants previously asserted that Shortway teaches that during the mechanical embossing step, sufficient temperature and pressure are applied to achieve cross-linking between the reactive polymerizable monomers distributed throughout the wear layer and the free-radical polymerization catalyst concentrated in predetermined portions of the design layer beneath. While Shortway clearly teaches this step as part of his method, the creation of embossed portions through selective melting makes no difference because Shortway

describes mechanical embossing in a gelled (or pre-cured state) state. Unlike the claimed invention, Shortway does not described mechanically embossing a softened wear layer. For at least these reasons, Applicants retract the specific remarks noted above, and ask the Examiner not to consider the previously filed remarks concerning Shortway in view of the remarks provided below.

IV. Rejections Under 35 U.S.C. §103

A. The Examiner rejected claims 53 and 54 under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 3,978,258 to Faust et al. ("Faust"). According to the Examiner, Faust discloses the "basic claimed method of making a surface covering including providing first and second layers and mechanically embossing a portion of the second layer, wherein the second layer is a wear layer that has been cured prior to mechanical embossing." Office Action at page 2. Applicants respectfully disagree and traverse this rejection.

Faust is directed to a surface covering and a method of making the same that comprises selectively crushing a foam layer by mechanically embossing to produce transparent portions through which the pigmented layer is visible. Col. 2, lines 38-48. Faust does not teach or suggest a method of making a surface covering comprising chemically embossing a first layer, and mechanically embossing a portion of a second layer. Indeed, Faust consistently teaches mechanically embossing, by selectively

crushing, the foam layer. See e.g., col. 4, lines 18-20 ("the products of the invention should include a cured wear layer over the selectively crushed foam plastic layer."). One skilled in the art would recognize that chemical embossing is a result of inhibitors or retarders that prevent foaming of certain printed portions of the foam layer. In other words, it appears that Faust is describing chemically and mechanically embossing the same layer, e.g., the foam layer, rather than two distinct layers, as claimed.

Furthermore, as the Examiner acknowledges, Faust also does not teach that the second layer is a wear layer having a uniform melt viscosity applied before chemically embossing, as recited in claim 53. In addition, Faust does not teach or suggest the mechanically embossed portion of the wear layer includes all of the surface of the wear, except the chemically embossed portion, as recited in amended claim 54, as well as new claims 55 and 56.

In view of these many deficiencies, one can objectively conclude that, at best, Faust may have made it obvious to try the claimed invention. In moving from the prior art to the claimed invention, however, one cannot base a determination of obviousness on what the skilled person might try or find obvious *to try*. Rather, the proper test requires determining what the prior art would have led the skilled person *to do*. The Federal Circuit has given some examples of what would constitute an "obvious to try" modification based on the prior art. See *In re O'Farrell*, 853 F.2d 894, 7 U.S.P.Q.2d 1673 (Fed. Cir. 1988). For example, what was 'obvious to try' was to explore a new

technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it." *Id.* at 903, 7 U.S.P.Q.2d at 1681 (citations omitted).

In the present case, Faust provides general guidance to use chemical embossing and mechanical embossing. Indeed, the extent of Faust's teachings on the use of chemical embossing is limited to a general description, which states:

Also, the unique appearance obtainable by the products of the invention may be combined with other effects obtainable by other known prior art techniques such as those mentioned above. For instance, if desired, inks containing blowing suppressants or inhibitors for blowing agent catalysts may be used on certain portions of the products to produce additional variations in possible design. Col. 4, lines 35-42.

Faust does not teach or suggest a method of making a surface covering comprising chemically embossing a first layer, and mechanically embossing a portion of a second layer, as claimed. Only in hindsight could it have been obvious to one with Faust before him to have combined chemical and mechanical embossing, as claimed. Thus, while the prior art may have made it obvious to try the "other effects obtainable by other known prior art techniques" to arrive at the claimed invention, such an obvious to try standard does not support a rejection under section 103. *Ecolochem, Inc. v. Southern Cal. Edison Co.*, 227 F.3d 1361, 1374, 56 USPQ 2d 1065, 1075 (Fed. Cir. 2000).

Accordingly, Applicants submit that the *prima facie* case of obviousness is improper and respectfully request that the rejection over Faust be withdrawn.

B. The Examiner has maintained and made final the rejection of claims 25, 26, 33-46, 51 and 52 under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 4,214,028 to Shortway et al. ("Shortway") for the reasons of record. Applicants respectfully traverse this rejection for at least the following reasons.

One skilled in the art would know that mechanical embossing of the wear layer of a vinyl sheet product may be accomplished in three different states of the wear layer: a softened state, a nonsoftened state, and a gelled state of the pre-wear layer. Mechanical embossing in the softened state is typically performed with an embossing roll that is cooled internally. Mechanical embossing in the nonsoftened state is typically performed with a hot embossing roll. Thus, softening does not occur until the wear layer makes contact with the embossing roll.

Unlike these two techniques, Shortway proposes performing mechanical embossing on a gelled or pre-cured wear layer. As taught in Shortway, the wear layer is initially laid down as a dispersion of polymer particles (e.g., PVC) suspended in a liquid plasticizer. See, e.g., col. 16, lines 45-50.

Prior to polymerization of the monomers, the pre-cured wear layer is not a homogeneous matrix. Instead, it consists of individual polymer particles that have been swollen by the liquid resin or plasticizer. The wear layer is subsequently obtained by

heating the gelled material to a temperature sufficient to react or polymerize the monomers and to form a homogeneous layer. As exemplified below, Shortway teaches that polymerization and cross-linking of the reactive polymerizable monomeric materials takes place during the mechanical embossing procedure.

[T]he polymerization and cross-linking of the monomers in the wear layer take place *during the embossing procedure which follows* and which takes place under about the same temperature as the preceding gelling procedure but under additional pressure whereby *the embossing of the surface of the wear layer and the polymerization of the reactive polymerizable monomers take place in the same operation.* (emphasis added) Col. 17, lines 58-65

Activation and polymerization and cross-linking of such reactive polymerizable monomeric materials takes place during the mechanical embossing procedure, *as usual.* (emphasis added) Col. 17, lines 58-65

Shortway clearly does not contemplate mechanical embossing a cured wear layer that is in a softened state. Rather, this reference particularly describes a technique that involves mechanically embossing a gelled or pre-cured wear layer. As shown from the plethora of references of record in this application, mechanical embossing a gelled or pre-cured wear layer is not common in the art due to inherent drawbacks associated with it. For example, because the polymeric particles have not been heated to a sufficient temperature to allow them to create a homogeneous matrix,

the resulting cured wear layer lacks desirable properties including clarity, tensile strength, and puncture and tear resistance.

In addition, Shortway teaches that, unlike embodiments of the claimed invention, the mechanical embossing step is performed prior to the chemical embossing step. This difference is a result of Shortway's embossing procedure described above, which clearly relies on mechanical embossing of a gelled, pre-cured wear layer. This unique mechanical embossing technique leads to the use of different starting materials than the claimed method that involves mechanical embossing of a cured and softened wear layer. For example, Shortway teaches that as a result of using pressures and temperatures sufficient to polymerize or cross-link reactive polymers in the printing layer during the initial mechanical embossing step, certain portions in the wear layer possess an "increased melt viscosity," resulting in a surface which is harder and "which is capable of resisting any softening or melting tendencies during the subsequent heating involved in the blowing or foaming procedure." Col. 19, lines 41-49. In other words, the materials used in Shortway are such that they result in an appropriate surface texture, without being affected by a subsequent chemical embossing step. *Id.* at lines 46-49 (teaching that the wear layer in Shortway is, "capable of retaining their flat, dead or dull mat embossed surface finishes or textures through the higher heating during the blowing and foaming operations.") *Id.*

For these additional reasons, even if Shortway suggests using chemical and mechanical embossing in combination, the order of those steps, and the materials response to those steps are of technical and patentable significance. Applicants maintain their position that one must significantly modify the steps taught by Shortway to arrive at Applicants claimed invention. Absent the improper reliance on Applicants disclosure, there is no teaching, suggestion or incentive to modify Shortway in the manner suggested by the Examiner.

Further, assuming that the Examiner did not rely on information gleaned from Applicants disclosure to support his obviousness positions, there would have been no reasonable expectation of successfully obtaining the claimed invention from Shortway, which is directed to a fundamentally different method of embossing. Accordingly, Applicants submit that the *prima facie* case of obviousness advanced by the Examiner is improper and respectfully request that the rejection over Shortway be withdrawn.

C. The Examiner has maintained and made final the rejection of claims 48-50 under 35 U.S.C. §103 as being unpatentable over Shortway, as applied to claims 25, 26, 33-46, 51 and 52 above, and further in view of U.S. Patent No. 4,100,318 to McCann et al. ("McCann"). In addition to the above deficiencies in Shortway, the Examiner's rejection further including McCann is further deemed improper because it stems from a false premise and is based on an improper foundation. According to the

Examiner, "the scope of the claims at issue is such that it encompasses use of components which may or may not be affected by the timing of the chemical embossing step." Office Action at p. 4. It is clear that in maintaining this rejection, the Examiner is relying on what Applicants are disclosing rather than what the prior art is teaching.

Assuming, for the sake of argument only, that the Examiner is correct in that the claimed components do not dictate the timing of the chemical embossing step, it is not only clear that the prior art components do dictate an order for chemical and mechanical embossing (when both are taught in combination), but the invention claimed in claims 48-50 also recite a particular order for chemical and mechanical embossing. The difference in order taught by Shortway cannot be remedied by McCann (or any other secondary reference) because it goes to the heart of the Shortway patent, which describes a particular method based on first mechanically embossing a gelled (pre-cured wear) layer followed by curing and chemical embossing. It is well-established that it is improper to combine references if their combination would result in the destruction of the intended operation (of the method described in the reference) or if a reference teaches away from the claimed invention. *See, In re Laskowski*, 10 USPQ 2d 1397 (Fed. Cir. 1989). In the present case, Shortway is clearly directed to a different method, which involves first mechanically embossing a gelled (pre-cured wear) layer. The reversal of the order of the steps described in Shortway, as asserted as obvious by the Examiner, is fundamentally inconsistent with the teachings

of Shortway. For this reason alone, the rejection over Shortway and McCann is improper and should be withdrawn.

In response to Applicants remarks that McCann expressly teaches that chemical embossing is taught as an alternative to mechanical embossing, the Examiner asserts that this teaching is in reference to a prior patent to Nairn. Office Action at 4. Applicants respectfully disagree. Confusion on this topic may be the result of the fact that the Examiner is apparently citing one part of the specification but relying on another. The part of the specification referring to Nairn is col. 6, lines 8-15, not col. 4, lines 8-15, which is relied on by Applicants.

When the proper section of McCann is analyzed, it is clear that McCann accurately describes using either a chemically etching step or mechanically embossing step to provide a surface texture to a cellular foam. Again, these steps are taught in the alternative, not together.

After the vinyl overlay 22 is applied, the web is passed through the fusion and expansion oven 35 and **if chemically etched**, will upon exiting the oven, the cellular foam 17 has the desired textured surface. **However, if optional mechanical embossing is employed** upon exiting the expansion oven, the cellular foam 17 is passed through a mechanical embosser 40.”) Col. 4, lines 8-15 (emphasis added).

Indeed, the section relied on by the Examiner also describes these embossing procedures in the alternative. That is, when McCann begins the discussion on chemical

embossing and refers to the Nairn patents, it is clear that it is as an alternative to mechanical embossing, not in combination to mechanical embossing. See, col. 5, lines 14-17 (teaching "*Chemical embossing techniques are alternatives to mechanical embossing*. A chemical embossing technique is described in U.S. Patent No. 2,961,332 issued to R. Frank Nairn.") col. 5, lines 14-17 (emphasis added). Thus, McCann clearly does not teach the combination of chemical and mechanical embossing, but teaches the as alternative embossing techniques.

In response to Applicants statement that the Examiner has not addressed the many factors and variables associated with complexities of combining chemical and mechanical embossing, the Examiner asserts that he has addressed these factors with respect to the claimed process. Office Action at 4.

The factors not addressed by the Examiner, however, are those not describing how the prior art would lead one to the claimed process considering the many deficiencies exemplified above. For this reason, Applicants maintain their position that, with the Applicants' specification as a guide, the Examiner has plucked individual teachings from different sections of the references to assemble the claimed invention. Accordingly, the combination of Shortway and McCann appears to be based on impermissible hindsight reconstruction. Moreover, merely identifying all the elements in the prior art is not sufficient to establish a prima facie case of obviousness. See, e.g., *In re Kotzab*, 55 U.S.P.Q.2d 1313 (Fed. Cir. 2000) ("Most if not all inventions arise from

a combination of old elements . . . identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention." (citations omitted)).

For at least these reasons, Applicants submit that the Examiner has not established a *prima facie* case of obviousness, and respectfully request that this rejection under section 103 be withdrawn.

V. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of the application and timely allowance of the pending claims. Please grant any necessary extensions of time required to enter this response and charge any additional required fees to our deposit account no. 06-0916.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE
PURSUANT TO 37 C.F.R. 1.121(c)(1)(ii)**

54. (Amended) A method of making a surface covering comprising:

chemically embossing a first layer to form a chemically embossed portion, and

mechanically embossing a [portion of a] second layer, wherein said second layer is a wear layer that has been cured prior to said mechanical embossing, wherein the mechanically embossed portion of the wear layer includes all of the surface of the wear layer, except the chemically embossed portion.